Pediatric Special Health Care Needs: Internal Pacemakers/Defibrillators

I. All Provider Levels

1. Follow general patient care guidelines in section A1.

2. Establish patient responsiveness.

    A. If cervical spine trauma is suspected, manually stabilize the spine.

3. Open the airway using a head tilt chin lift if no spinal trauma is suspected, or modified jaw thrust if spinal trauma is suspected.

    A. Consider placing an oropharyngeal or nasopharyngeal airway adjunct if the airway cannot be maintained with positioning.

    B. Suction as necessary.

    C. If the child has a tracheostomy tube, follow Tracheostomy protocols in section V1 to manage the tracheostomy tube.

4. Assess the patient's breathing including rate, auscultation, inspection, effort and adequacy of ventilation as indicated by chest rise.

    A. Obtain a pulse oximeter reading.

5. If breathing is adequate, place the child in a position of comfort and administer 100% oxygen.

6. If no breathing is present, then position the airway and start bag valve ventilations using 100% oxygen.

    A. If the child has a tracheostomy tube, follow Tracheostomy protocols in section V1 to manage the tracheostomy tube.

Pediatric Special Health Care Needs: Internal Pacemakers/Defibrillators

I. All Provider Levels (continued)

7. If airway cannot be maintained, begin ventilations with B-V-M and initiate advanced airway management using a combi-tube.

> ***Note Well:*** *Do not use a combi-tube on a patient younger than 16 years of age or less than 5-feet tall.*

> ***Note Well:*** *The EMT-I and EMT-P should use ET intubation.*

8. Check pulse.

   A. If no pulse is present, begin chest compressions and follow the appropriate algorithm.

   B. Determine if the child has a pacemaker or a defibrillator.
      i. The internal pacemaker can easily be felt near the clavicle, or in the abdomen in younger children.

   C. If defibrillation or pacing is needed, do not place the defibrillator paddles or pacemaker patches directly over the internal pacemaker or defibrillator generator.

9. Assess circulation and perfusion.

10. Ask the caregivers for the child's baseline vital signs.

11. Call for ALS support.

Pediatric Special Health Care Needs: Internal Pacemakers/Defibrillators

I. All Provider Levels (continued)

12. Obtain a complete medical history for the patient, including a history of the present illness and the past medical history. Specifically ask the following questions and document the answers

A. For a child with an internal pacemaker:
   i. What type of heart problem does the child have?
   ii. What is the child's baseline rhythm and what is his/her baseline or underlying heart rate?
   iii. What type of pacemaker does the child have?
   iv. Is the child dependent on the pacemaker?
   v. When was the pacemaker implanted?

> ***Note Well:*** *Pacemakers may only have a 3-5 year battery life*

B. For a child with an internal defibrillator:
   i. What type of heart problem does the child have?
   ii. What is the child's baseline rhythm and what is his/her baseline or underlying heart rate?
   iii. What is the setting for the child's defibrillator or at what heart rate does the defibrillator fire?
   iv. How many shocks has the child felt?
   v. Has the child experienced any of the following:
      a. felt more than 3 shocks in a row
      b. unusual symptoms after experiencing a shock (such as dizziness, palpitations etc)
      c. sensations of dizziness, light headedness, palpitations, etc. for a period of time with out any shocks.
   vi. When was the defibrillator implanted?

> ***Note Well:*** *Defibrillators may only have a 3-5 year battery life*

Pediatric Special Health Care Needs: Internal Pacemakers/Defibrillators

I. All Provider Levels (continued)

13. Determine if the cause of the emergency is related to a malfunction of the pacemaker/defibrillator.

14. Establish IV access if necessary.

Note Well: *BLS Providers cannot start an IV on a patient less than eight years of age*

Note Well: *An ALS unit must be en route or on scene.*

Note Well: *If IV access cannot be readily established and the child is younger than 6 years of age then ALS Providers only may proceed with IO access. If the child is over 6 years of age, then contact Medical Control for IO access.*

II. Advanced Life Support Providers

1. Initiate cardiac monitoring.

   A. Treat any arrhythmias with the appropriate algorithm.

III. Transport Decision

1. Contact medical control for additional instructions.

2. Bring any of the child's medical charts or medical forms that the caregiver may have, as well as any supplies that the parent may have.

> **Note Well:** *Some caregivers carry a "go bag" for their children with extra supplies. Ask the parent if they have a "go bag" or similar bag for their child and bring it to the hospital.*

3. Initiate transport to the nearest appropriate facility as soon as possible.

III. Transport Decision (Continued)

4. Perform focused history and detailed physical exam en route to the hospital.

5. Reassess at least every 3-5 minutes, more frequently as necessary and possible.

IV. The Following Options are Available by Medical Control Only

1. IO access for patients greater than 6 years of age.

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